

RESEARCH NOTES

A *CERCOSPORA* LEAF SPOT OF ACEROLA IN PUERTO RICO¹

The fruit of the acerola tree (*Malpighia puniceifolia* L.) is the richest known source of natural vitamin C^{2, 3}. In Puerto Rico, a total of about 400 acres of land are presently planted to this fruit crop, mainly in the Toa Baja and Toa Alta municipalities. Different varieties or clones of acerola are also grown in home gardens all over the Island.

No diseases have been reported on acerola in Puerto Rico, except for green scurf which is caused by the alga *Cephaleuros virescens* Kunze.⁴ During the last few years a leaf spot disease, similar to that reported by Burnett and McFarlin from Florida⁵, and by Holtzmann and Aragaki from Hawaii⁶, has caused serious damage to the foliage of cultivated acerola trees throughout the Island. The malady was found to prevail in commercial orchards in Toa Baja and Toa Alta. The disease is characterized by severe leaf spotting. Affected leaves turn yellow and eventually fall. Total defoliation may occur in extreme cases of infection.

Symptoms on acerola in Puerto Rico are similar to those caused by *Cercospora bunchosiae* Chupp and Muller, described from Florida and Hawaii^{7, 8}. Leaf spots are 1 to 5 mm. in diameter, mostly round, sometimes irregular, slightly depressed, dark-brown to almost jet black in color, with a narrow to wide golden halo, occurring on both leaf surfaces. Several spots may coalesce to form large blotches (fig. 1).

Microscopic examination of the lesions, revealed the presence of a fungus of the genus *Cercospora* with the following characteristics: Stromata 40 to 103 μ in diameter, dark-brown; fascicles dense; conidiophores pale to light

¹ The writer is indebted to Miss Josefina Sánchez del Moral, Dr. Julio Bird, and Dr. Julio H. López-Rosa for their valuable assistance during the course of this research.

² Aróstegui, F., Asenjo, C. F., Muñiz, A. I., and Alemañy, L., Observations and data on a promising selection of the West Indian Cherry, *Malpighia puniceifolia* L., *J. Agr. Univ. P.R.* 39(2): 51-6, 1955.

³ Moscoso, Carlos G., West Indian Cherry—Richest known source of natural vitamin C, *Econ. Bot.* 10(3): 280-94, 1956.

⁴ Index of Plant Diseases in the United States, Agricultural Handbook No. 165, USDA, 1960.

⁵ Burnett, H. C., and McFarlin, J. R., *Cercospora bunchosiae*; a new leaf spot disease of Barbados cherry, *Plant Dis. Rptr.* 44: 505, 1960.

⁶ Holtzmann, O. V., and Aragaki, M., Susceptibility of acerola to *Cercospora* leaf spot, *Phytopathology* 56: 1114-5, 1966.

⁷ Burnett, H. C., and McFarlin, J. R., *Cercospora bunchosiae*; a new leaf spot disease of Barbados cherry, *Plant Dis. Rptr.* 44: 505, 1960.

⁸ Holtzmann, O. V., and Aragaki, M., Susceptibility of acerola to *Cercospora* leaf spot, *Phytopathology* 56: 1114-5, 1966.

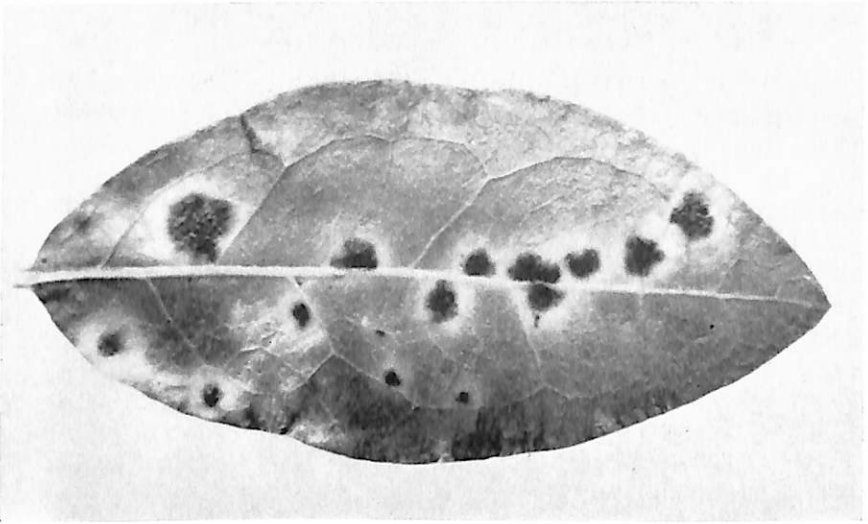


FIG. 1.—Acerola leaf with lesions caused by *Cercospora bunchosiae*.

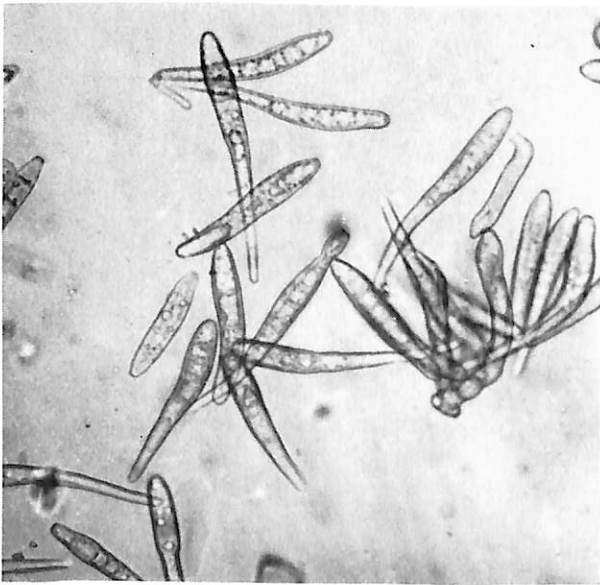


FIG. 2.—Conidia of *Cercospora bunchosiae* obtained from naturally infected acerola leaves.

olivaceous brown, irregular in width, mostly straight, sometimes slightly curved, rarely geniculate, multiseptate, not branched, subtruncate to rounded tips with small spore scars, $4.5\text{--}9\ \mu \times 33\text{--}119\ \mu$. Conidia formed terminally, pale to dark-brown, obclavate to obclavate-cylindric with 3 to 10 transverse septations, straight to slightly curved, base obconically truncate, tip obtuse, $4.5\text{--}10\ \mu \times 28\text{--}91\ \mu$, and average of $8.9 \times 64\ \mu$ (based on measurements of 50 conidiophores and 100 conidia taken at random) (fig. 2).

The fungus grows very slowly on potato dextrose agar (PDA). Growth and sporulation were not enhanced by several culture media, namely, corn-meal agar (CMA), V-8 juice agar (V-8A), oatmeal agar (OMA), and acerola leaf extracts. Maximum sporulation was obtained on V-8A.

Pathogenicity tests were conducted in the greenhouse. Healthy seedlings of the acerola clone B-17, which is highly susceptible to leaf spot in the field, were repeatedly inoculated with dilute conidial suspensions of the fungus, but without success. However, when affected leaves from a field where the fungus was found to be sporulating profusely were placed against young and mature leaves of B-17 seedlings, symptoms of the disease appeared 14 days after inoculation. Conidia recovered from lesions on the plants thus inoculated were found to be in all cases identical with those occurring on naturally infected trees.

Although conidia and conidiophores are slightly longer than those described by Chupp and Muller^{9,10} for the *Cercospora* species on *Bunchosia glandulifera*, the fungus from Puerto Rico appears to be similar to the one reported on acerola in Florida and Hawaii^{11, 12}.

Pedro Luis Meléndez

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⁹ Chupp, C., and Muller, A. S., *Bol. Soc. Venez. Cienc. Nat.* 8(52): 38, 1942.

¹⁰ Chupp, C., A monograph of the fungus genus *Cercospora*, published privately by the author, Ithaca, N.Y. 557 p., 1953.

¹¹ Burnett, H. C., and McFarlin, J. R., *Cercospora bunchosiae*; a new leaf spot disease of Barbados cherry, *Plant Dis. Rptr.* 44: 505, 1960.

¹² Holtzmann, O. V., and Aragaki, M., Susceptibility of acerola to *Cercospora* leaf spot, *Phytopathology* 56: 1114-5, 1966.